The Management Of The Adult Symptomatic Pronated Foot: A Literature Review

Introduction

The symptomatic pronated foot, often linked to posterior tibial tendon dysfunction (PTTD), or the progressive collapsing foot deformity, is a common musculoskeletal condition characterised by a pronated foot, medial arch collapse, foot pain, and impaired mobility. (1),(2), (3), (4),(5),(6),(7). The use of foot orthoses and exercises is often used to manage this condition.

This review aimed to investigate the effectiveness of foot orthoses in managing symptomatic pronated foot.

Method

The process followed a systematic approach comprising key stages. Figure 1 illustrates the research process conducted.

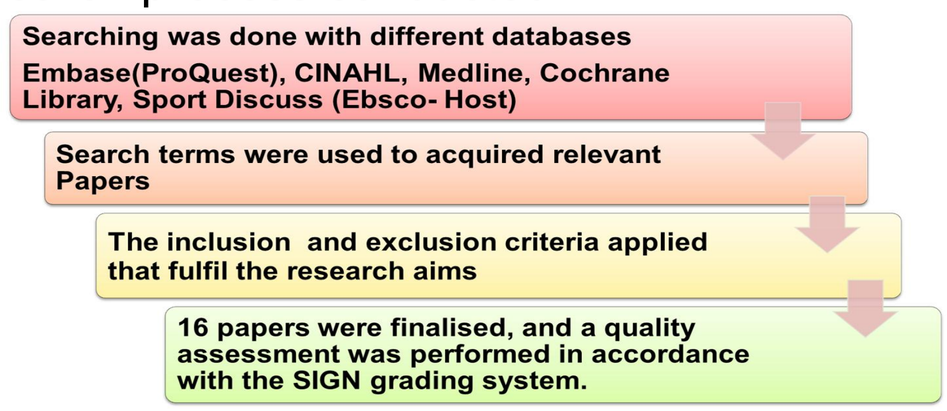

Figure 1: Research Process

Results

- Sixteen studies met the inclusion criteria.
- Biomechanical findings were inconsistent, and some studies showed **gait improvements**.
- Integrated exercise therapy alongside orthotic treatment demonstrated **pain reduction** and **functional gains**. However, variability in study design, sample size, gender and outcome measures limits generalisability.
- Table 1 illustrates the studies representing each Fos results on five Outcome measures using several measuring tools.

Table 1- Study Findings on each outcome measure

Outcome measures	Measuring tools	Prefabricated Fos Studies		Custom Fos Studies	
		Sig.	Insig.	Sig	Insig
Biomechanics	Kinetics	2	2	1	2
	Kinematics	1	2	1	2
Function	FFI	1	2	2	1
	SMFA	0	0	1	1
Pain	VAS	1	0	2	1
	NRS/NPRS	0	0	1	1
Plantar Foot Pressure	Planter pressure	0	2	1	0
Quality of Life	IPAQ	0	0	1	1

Statistically Significant Improvement (Sig.) – Blue
statistically Insignificant (insig.) – Orange

Discussion

- 15 of the 16 studies in this review lacked one or more key details regarding foot orthosis designs(8).
- Six of the 16 studies (8),(9),(10),(11),(12),(13),(14) used multiple treatment methods, and five of the six studies (9),(11), (12),(13),(14) showed that when **exercise programs are combined with foot orthoses**, they all showed a significant pain reduction in the symptoms reported.
- The findings underpin the importance of collaborative care involving allied health professionals.
- The results align with previous findings but highlight methodological inconsistencies across most studies. Future research is recommended with better reporting of key insole design features.

Conclusion

- Incorporating exercise therapy alongside foot orthoses has a significant positive effect on self-reported pain management measures.
- Several methodological flaws in clinical research can lead to biased results and misinterpretation.
- It remains unclear which foot orthosis type produces the best clinical outcome due to the various foot orthosis types used in the research studies.
- Collaborative, interdisciplinary approaches appear to yield better outcomes. Future research should focus on integrated care models and robust study designs.

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